# LP Morgan - Plana AT

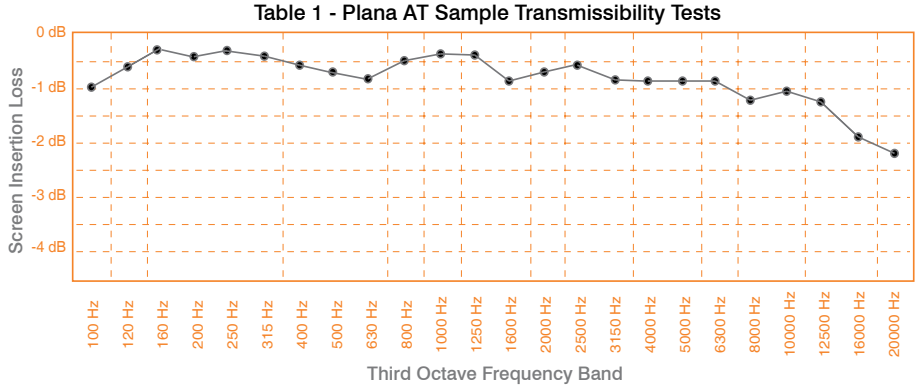
**LP Morgan Plana AT fabric is an innovative solution for maximising the visual and aural experience.**

A specially designed woven fabric, it allows for speakers to be placed behind the screen with virtually no loss of sound quality. It gives home theatre designers the freedom to place speakers for optimal full range audio performance.

With a massive 800,000 plus openings per square metre, Plana AT sound transmission patterns are similar to high quality speaker grille cloth. And just as importantly, visually there is only 6% light loss.

Plana AT the perfect partnership - sound and vision

**Table 1 - Plana AT Sample Transmissibility Tests**




### Test Procedure

Testing the AT1200/ATGrey acoustically transparent material was performed by engineers at Auralex Acoustics in Indianapolis, IN in November 2005.

A Klipsch loudspeaker was positioned in a semi-anechoic test room such that is simulated a centre-channel configuration in a typical theatre set up. An Earthworks omni-directional microphone was placed 24" from the loudspeaker. Wideband (20-20,000 Hz) pink noise was played through the loudspeaker using the GoldIline Audio Toolkit DVD. The third-octave band levels were measured with TerraSonde Audio Toolbox 3 analyser using Real-Time Analyses (RTA) module.[1] The overall noise level was set such that the signal-to-noise in the test room was at least 25dB in all bands of concern. A 30 second average of the sound level was measured and saved with no screen sample in place.

Using the temporary screen framing apparatus, the screen samples were placed between the loudspeaker and the microphone. The wideband pink noise signal was played again through the loudspeaker and the third-octave band levels were measured and saved for each screen sample. Nominal screen sample size was 1600mm wide by 900mm high. The distance from the microphone to screen sample surface was 450mm. (Note: Different screen-to-loudspeaker and/or screen-to-microphone distances yielded no significant changes in the measured results.

[1] Microphone and analyser were calibrated to 94dB (SPL) at 1 kHz. Levels were measured from 25-20,000 Hz, but only the bands of concern for transmissibility are reported. i.e. 100-20,000 Hz.

### Why use an Acoustically Transparent Screen

When installing a home theatre system, the proper set up for the sound system ensures the highest quality results. The ideal position for the main speaker is behind the screen on the same level as the right and left speakers. This maintains:

- Quality sound localisation for the dialogues and overall sound effects
- Cinema quality that is true to the original sound mixing engineering
- The ability to use identical speakers due to space restrictions and avoids interference with other objects on the floor or ceiling

Tables 1 & 2 show the third-ocatve band insertion loss results in detail from 100 through 20,000 Hz. and summarises the average and maximum screen insertion loss (IL) for each screen sample, as well as the band which the maximum IL occurred. These results are valid for the third-ocatve bands between 100 and 20,000 Hz.

**Table 2**

| Band | AT1200 | AT Grey |
|---|---|---|
| 100 Hz | -0.7 dB | -0.9 dB |
| 125 Hz | -0.4 dB | -0.4 dB |
| 160 Hz | 0.0 dB | -0.3 dB |
| 200 Hz | -0.2 dB | -0.3 dB |
| 250 Hz | -01 dB | -0.3 dB |
| 315 Hz | -0.2 dB | -0.4 dB |
| 400 Hz | -0.4 dB | -0.5 dB |
| 500 Hz | -0.5 dB | -0.6 dB |
| 630 Hz | -0.6 dB | -0.8 dB |
| 800 Hz | -0.3 dB | -0.5 dB |
| 1000 Hz | -0.2 dB | -0.3 dB |
| 1250 Hz | -0.2 dB | -0.2 dB |
| 1600 Hz | -0.7 dB | -0.9 dB |
| 2000 Hz | -0.5 dB | -0.7 dB |
| 2500 Hz | -0.4 dB | -0.5 dB |
| 3150 Hz | -0.6 dB | -0.7 dB |
| 4000 Hz | -0.6 dB | -0.8 dB |
| 5000 Hz | -0.6 dB | -0.7 dB |
| 6300 Hz | -0.6 dB | -0.7 dB |
| 8000 Hz | -1.0 dB | -1.0 dB |
| 10000 Hz | -0.9 dB | -0.9 dB |
| 12500 Hz | -1.0 dB | -1.6 dB |
| 16000 Hz | -1.6 dB | -2.3 dB |
| 20000 Hz | -2.0 dB | -2.8 dB |
| Max. | -2.0 dB | -2.8 dB |
| Avg. | -0.6 dB | -0.8 dB |

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